FROZEN FILLED WAFFLE

RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 60/227,059, filed Aug. 21, 2000.

BACKGROUND OF THE INVENTION

[0002] The subject invention relates generally to an improved filled food product and, more specifically, to a frozen toastable filled waffle that is pre-cooked, packaged, and frozen for storage.

[0003] Frozen toaster products, such as toaster waffles, have become widely consumed as part of a meal due to their convenience and short preparation time. The typical toaster waffle is pre-cooked, packaged, and frozen for storage. A consumer typically toasts the waffle while it is still frozen. It is desirable to enhance the flavor of the toaster waffle by adding a filling material such as fruit, jelly, cheese, and the like. However, such a product can present several difficulties that may result in reduced quality of the toastable frozen filled waffle.

[0004] A typical frozen waffle is produced by depositing waffle batter into a bottom section of a waffle iron, closing the iron, and cooking the batter into a crisp waffle product. The waffle is subsequently frozen and packaged for storage and delivery to consumers. The introduction of a filling material into a waffle requires that a first layer of batter be deposited into the bottom section of the iron followed by a layer of filling material and then a second layer of batter.

[0005] A problem with other frozen filled food products is that the filling contains water and once the product is frozen a large portion of the water in the filling is in the crystalline frozen state. These products are typically reheated from the frozen state in an upright toaster. These toasters heat largely in the infrared range by radiant heat. One problem with past filled products is that the water ice crystals act as a heat sink absorbing large amounts of heat to overcome the heat of fusion to thereby convert the water from the solid state to the liquid state when the frozen filled food product is subsequently toasted. The large amount of ice crystals absorb a substantial amount of BTU's of the applied heat with the result that the filling does not heat up to a significant extent during initial heating. As a result, to heat the filling material after ice crystals have formed requires additional heat be radiated through the casing material and into the filing material after the heat of fusion has been reached, which has resulted in burning or charring of the outer casing material in past products. It is unacceptable for consumers if a toastable filled waffle has a cold or icy filling. This problem needs to be overcome for a successful frozen filled waffle.

[0006] A related problem for past frozen filled food products is the migration of water from the filling material into the surrounding casing material. Free water molecules having absorbed pigments from, for example, the fruit flavoring in the filling material can migrate into the casing material causing discoloration. Further, the casing material can become soggy and the filling material can lose its flavoring due to migration of water from the filling into the casing material. In fact, the entirety of the filling material has been known to be absorbed into the casing material in other frozen filled food products.

[0007] One other potential problem with a filled waffle is the storage stability of the filled waffle. To provide a high level of flavoring and other qualities such as mouth feel, the outer casing of the filled waffle generally needs to be formulated with a high water content. High water content is known to cause the problems noted above in other filled food products.

[0008] Therefore, it would be desirable to develop a toastable frozen filled waffle that reheated in a toaster to produce a crisp waffle with a warm filling and no burning of the outer casing material. Furthermore it would desirable to have a filling material that prevents the migration of water from the filling material into the outer casing material. Still further, it would be desirable to produce a frozen filled waffle that retains the filling material in its entirety within the outer casing material.

SUMMARY OF THE INVENTION

[0009] In one embodiment, the present invention is a baked and freezer stable filled waffle comprising an outer casing material formed from a batter comprising a homogeneous mixture of from 30 to 65 percent by weight water, from 25 to 70 percent by weight flour, from 0.05 to 2.5 percent by weight bicarbonate and from 0.04 to 2 percent by weight leavening acid. The outer casing material surrounds a filling material having a positive water content of up to 40 percent by weight with the water content in the filling material being less than the percent by weight water in the outer casing material. The outer casing material has a water activity level of from 0.9 to 0.99 and the filling material has a water activity level of less than or equal to 0.95 with the water activity level of the filling material being less than the water activity level of the outer casing material.

[0010] In another embodiment, the present invention is a baked freezer stable filled waffle comprising an outer casing material formed from a batter comprising a homogeneous mixture of from 30 to 65 percent by weight water, from 25 to 70 percent by weight flour, from 0.05 to 2.5 percent by weight bicarbonate and from 0.04 to 2 percent by weight leavening acid. The outer casing material surrounds a filling material formed from a homogeneous mixture comprising a positive water content of up to 40 percent by weight, from 35 to 80 percent by weight sweeteners, and from 0.5 to 50 percent by weight fruit source, with the water content in the filling material being less than the percent by weight water in the outer casing material. The outer casing material has a water activity level of from 0.9 to 0.99 and the filling material has a water activity level of less than or equal to 0.95 with the water activity level of the filling material being less than the water activity level of the outer casing material.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Other advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

[0012] **FIG. 1** is a partial cross-sectional perspective view of a round frozen filled waffle according to the present invention showing the filling material;

[0013] **FIG. 2** is a partial cross-sectional perspective view of a square frozen filled waffle according to the present invention.